What is claimed is:

1. An electrode material for a lithium secondary battery comprising a carbon fiber,

wherein the carbon fiber has a coaxial stacking morphology of truncated conical tubular graphene layers;

wherein each of the truncated conical tubular graphene layers includes a hexagonal carbon layer and has a large ring end at one end and a small ring end at the other end in an axial direction; and

wherein at least part of edges of the hexagonal carbon layers is exposed at the large ring ends.

2. The electrode material for a lithium secondary battery as defined in claim 1,

wherein at least part of edges of the hexagonal carbon layers is exposed at the small ring ends.

3. The electrode material for a lithium secondary battery as defined in claim 2,

wherein the coaxial stacking morphology of the truncated conical tubular graphene layers is vapor grown; and

wherein at least part of a deposited film formed during the vapor growth is removed from the large and small ring ends.

4. The electrode material for a lithium secondary battery as defined in claim 1,

wherein the coaxial stacking morphology of the truncated conical tubular graphene layers has a shape of a hollow core with no bridge.

5. The electrode material for a lithium secondary battery as defined in claim 1,

wherein an outer surface of the carbon fiber is formed of the large ring ends stacked in the axial direction; and

wherein the exposed part of the edges of the hexagonal carbon layers has an area equal to or more than 2 percentages of an area of the outer surface.

6. The electrode material for a lithium secondary battery as defined in claim 5,

wherein positions of the large ring ends forming the outer surface are irregular, and the outer surface has minute irregularity at the level of atoms.

7. The electrode material for a lithium secondary battery as defined in claim 1,

wherein an inner surface of the carbon fiber is formed of the small ring ends stacked in the axial direction; and

wherein positions of the small ring ends forming the inner surface are irregular, and the inner surface has minute irregularity at the level of atoms.

8. The electrode material for a lithium secondary battery as defined in claim 1,

wherein several tens to several hundreds of the hexagonal carbon layers are stacked.

9. The electrode material for a lithium secondary battery as defined in claim 4,

wherein an electrolyte is introduced and held in the hollow core.

10. The electrode material for a lithium secondary battery as defined in claim 1,

wherein the carbon fiber is an anode material.

11. The electrode material for a lithium secondary battery as defined in claim 1,

wherein the carbon fiber is a cathode material.

12. A lithium secondary battery in which the anode material as defined in claim 10 is used for an anode.

13. A lithium secondary battery in which the cathode material as defined in claim 11 is used for a cathode.